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### UNIDO activities related to digital transformation, innovation and AI

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### Report by the Director General

The present document provides an overview of the activities conducted by UNIDO in the area of digital transformation, innovation and artificial intelligence (AI). It supplements the information contained in the report presented to the fiftieth session of the Industrial Development Board ([IDB.50/17](#)) and in the Annual Report of UNIDO 2022 ([IDB.51/2](#)).

## I. Introduction

1. In line with the focus area of digital transformation and innovation of the medium-term programme framework 2022–2025 and relevant provisions of the Abu Dhabi Declaration, UNIDO is advancing inclusive and sustainable industrial development in the digital era through its four complementary core functions: (i) technical cooperation; (ii) analytical, research and policy advisory services; (iii) normative function; and (iv) convening and partnerships.

## II. Technical cooperation

2. In collaboration with Germany, UNIDO is assisting Côte d'Ivoire and Tunisia to develop digital ecosystems and increase employment opportunities for youth through tailored capacity-building. Furthermore, under the SwitchMed II programme, UNIDO is supporting Tunisia in transitioning its aquaculture sector towards sustainable and circular practices using an AI-powered analysis of fish behaviour in aquafarms.

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3. In agribusiness, UNIDO assists Member States in identifying and deploying digital agriculture solutions. A digital dashboard was developed and deployed in Ghana to help more than 50 food and agribusiness enterprises improve their productivity, compliance and resource efficiency. UNIDO supported Namibia in addressing challenges relating to agro-industry, water and waste management, land degradation and ecosystems conservation through an innovative project, which promotes sustainable agricultural practices using digital technologies, including a machine-learning algorithm for detecting invasive species. In the Bolivarian Republic of Venezuela, UNIDO's project helps modernize key agro-industrial value chains with a focus on precision agriculture and smart farming practices.
4. The Brest Demonstration and Innovation Center, established in Belarus, facilitates technological learning of small and medium-sized enterprises (SMEs), with plans to expand it into a large-scale smart manufacturing support centre engaging with stakeholders from other countries. Ultimately, the centre seeks to become an innovation hub fostering regional innovation and business ecosystems development.
5. UNIDO is assisting the United Republic of Tanzania to establish a blockchain knowledge hub and to roll out a nationwide learning programme on blockchain management and application, benefiting from Slovenian expertise in blockchain infrastructure set-up. The project seeks to enhance the United Republic of Tanzania's economic performance and market access through blockchain-powered verification, interoperability and reliability; improve digital governance processes; increase efficiency of public services, and boost competitiveness and innovation in SMEs.
6. Small and medium-sized manufacturers in the automotive industry in India are supported with policy analysis that includes a survey and the design of data reviews to support policy making, to enhance quality, productivity, and resource efficiency through innovation and digitalization. The programme includes capacity-building activities, digital champion workshops and digitalization readiness assessments.
7. The Private Financing Advisory Network (PFAN) and the Global Cleantech Innovation Programme are providing business acceleration and investment facilitation services to start-ups and SMEs with innovative clean energy as well as climate mitigation and adaptation solutions, including digital technologies. For example, PFAN supported the Okra Solar company from Cambodia to promote its plug and play hardware and software solution, which allows smart pay-as-you-go microgrids to be created by connecting existing solar panels and batteries.
8. Under the Global Eco-Industrial Park Programme, UNIDO developed the Eco-Industrial Park Management Services Tool, which reviews and identifies digital opportunities and automation solutions for the park management and tenant companies for increased resource efficiency and competitiveness.

### III. Analytical, research and policy advisory services

9. UNIDO's report "Gender, Digital Transformation and Artificial Intelligence",<sup>1</sup> launched during the High-level Political Forum on Sustainable Development in July 2023, identified 150 international initiatives and laid out a framework to address gender bias and stereotypes hindering women's participation as users, learners and developers of digital technologies.
10. A background paper "Propelling LDCs in the Digital Age: A 4IR Perspective for Sustainable Development",<sup>2</sup> was prepared jointly by UNIDO, the Enhanced Integrated Framework and the United Nations Technology Bank for the Least Developed Countries. The paper was issued for and presented at the Fifth United Nations Conference on Least Developed Countries and presents an overview of the

<sup>1</sup> <https://hub.unido.org/sites/default/files/publications/GENDER%2C%20DIGITAL%20TRANSFORMATION%20AND%20AI%20REPORT.pdf>.

<sup>2</sup> [https://hub.unido.org/sites/default/files/publications/Publication\\_4IR\\_LDC\\_1.pdf](https://hub.unido.org/sites/default/files/publications/Publication_4IR_LDC_1.pdf).

approaches least developed countries can take to absorb the emerging and transformative technologies that fall under the umbrella of the fourth industrial revolution.

#### **IV. Normative function**

11. UNIDO, together with partners, supported Jordan in the development of its Artificial Intelligence Strategy and Implementation Plan 2023–2027.<sup>3</sup> The Strategy's goal is to make Jordan a regional leader in AI and create a unique and attractive technological and entrepreneurial environment where AI can be effective, supportive and be an integral part of the national economy.

12. In cooperation with the Brazilian Support Service for Micro and Small Enterprises and the Federal University of Rio Grande do Sul, UNIDO produced an international benchmarking of digital transformation policies. The initiative provides a summary of benchmarking findings, focusing on policies and initiatives for the digitalization of small companies in the BRICS, European Union, Latin America and North Africa regions. Through the Diffusion of Innovation theory, a total of 39 initiatives were categorized in three areas: awareness, implementation and maintenance, offering insights into the initiatives' adoption and sustainability within their specific contexts.

13. In January 2023, UNIDO and the Office of the Secretary-General's Envoy on Technology convened a Development Dialogue to seek inputs from Member States for the United Nations Secretary-General's Global Digital Compact.

#### **V. Convening and partnerships**

14. In July 2023, UNIDO launched the Global Alliance on Artificial Intelligence for Industry and Manufacturing (AIM-Global) at the World AI Conference held in Shanghai, China. AIM-Global will serve as a collaboration platform for governments, international organizations, the private sector and industry leaders to foster the responsible, sustainable, inclusive and ethical application of AI in the industrial sector.

15. UNIDO participated in the AI for Good Summit, organized by the International Telecommunication Union in partnership with 40 United Nations agencies in July 2023 in Geneva, Switzerland, and is contributing to the development of guidelines on the use of AI.

#### **VI. Outlook**

16. The coming years will present unparalleled opportunities and challenges in the realm of digital transformation. By embracing the momentum created by rapid technological advancements, UNIDO anticipates a significant shift in the way industries will operate, promoting sustainability, efficiency and inclusivity. UNIDO is also cognizant of the socioeconomic and environmental challenges that digital transformation may entail, especially in developing countries.

17. As digital technologies become increasingly mainstream, there is a pressing need for upskilling and retraining of the current workforce, while equipping the next generation with AI-related competencies. UNIDO envisions collaboration with educational institutions and learning platforms to ensure that the right skills reach the right demographics, leaving no one behind.

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<sup>3</sup> [https://www.modet.gov.jo/ebv4.0/root\\_storage/en/eb\\_list\\_page/40435648.pdf](https://www.modet.gov.jo/ebv4.0/root_storage/en/eb_list_page/40435648.pdf).

18. Given the growing concerns around AI ethics, privacy and security, UNIDO aims to play a role in strengthening digital governance at all levels, and creating industrial policy frameworks to regulate the responsible use of digital technologies.

19. To become a trusted partner of choice for Member States and industry stakeholders on their path to sustainable digital future, UNIDO will embark on profound corporate-driven digital transformation of its internal operations, programmes, human capital and organizational culture. To guide these efforts, UNIDO developed a draft Operational Strategy for Digital Transformation that will be presented at the twentieth session of the General Conference.

## **VI. Action required of the Conference**

20. The Conference may wish to take note of the information contained in this report and provide guidance on further work in the area of digital transformation, innovation and AI.

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